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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/697,587	10/26/2000	Michael W. Bychowsky	CM04414H	3823

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EXAMINER	
WONG, BLANCHE	

ART UNIT	PAPER NUMBER
2667	4

DATE MAILED: 02/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/697,587	BYCHOWSKY ET AL.	
	Examiner	Art Unit	
	Blanche Wong	2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5,6 8-10,11-19* is/are rejected.

7)☒ Claim(s) *4 and 7* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2 and 3*.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed July 23, 2002, fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

The foreign patent document JP 63061532 was not found with the application.

2. The information disclosure statement filed October 15, 2002, fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

The non patent literature document titled "A Preemptive Packet Transfer Scheme with Virtual Cells in a Long Packet" by Watanabe, was not found with the application.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitation "flagging a packet header of packet having a low priority to identify pending packets to allow for transmission of packets having a high priority" of claim 1 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to under 37 CFR 1.83(a) because they fail to show the limitation "flagging a packet header of packet having a low priority to identify pending packets to allow for transmission of packets having a high priority" of claim 1 in Fig. 3 as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to under 37 CFR 1.83(a) because they fail to show "...determined that the second data packet has a higher priority then the first data packet..." as described in the specification on p.5, ln. 30. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to under 37 CFR 1.83(a) because they fail to show "the remaining portion" and that "The remaining portion of the first data packet is then stored" as described in the specification on p.5, ln. 31-32. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the

drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

7. The drawings are objected to under 37 CFR 1.83(a) because they fail to show "After the packet header is flagged, the higher priority data packet is transmitted" as described in the specification on p.5, ln. 33-34 (step 112 is to transmit remainder of non-time critical packet). Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

8. Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect may be deferred until after the examiner has considered the proposed drawing correction. Failure to timely submit the proposed drawing correction will result in the abandonment of the application.

Claim Objections

9. Claim 15 objected to because of the following informalities: typographical error.

In claim 15, ln. 2, "high packet" should be replaced by and read "high priority packet." Examiner will use "high priority packet" in reading the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 1,2,3,5,6,8,9,10 rejected under 35 U.S.C. 103(a) as being unpatentable over IBM (EP 0 582 537 A2) (provided by the applicant) and in view of Kanakia (U.S. Pat No. 5,309,432).

Regarding claim 1, IBM EP 0 582 537 A2 ("Transmission of high-priority, real time traffic on low-speed communication links") uses a shared packet pipe (low speed communications links) to transport a plurality of types of packets (mixed data/voice/multimedia) each have a different priority (high-priority, real-time traffic). IBM discloses a method comprising the steps of flagging a packet head of packet having a low priority to identify pending packets to allow for transmission of packets having a high priority 46 (flag generator); prematurely ending the transmission of a packet having the low priority (preempt/resume protocol), placing the remainder of the packet having the low priority in a storage device 54 (preemptable packet buffer); transmitting a packet having the high priority (preempt/resume protocol); and transmitting the remainder of the packet having the low priority once the packet having the high priority is finished transmitting (preempt/resume protocol). However, IBM fails to disclose a method for appending multiple packets in a shared packet pipe. In an analogous art, Kanakia discloses wherein packets received in the switch are stored in memory until they are

output, and packets are serially received in input shift registers wide enough to store an entire packet. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify method by including a buffer wide enough to append and store packets, as taught by Kanakia, for high speed packet switching. Col. 2, ln. 38-41.

Regarding claim 2, IBM also discloses the step of prematurely ending the transmission of a packet having a low priority (preempt/resume protocol) and the step of inserting a packet flag at the place in which the packet is to be divided 20C,20G (start preempt flag,end preempt flag).

Regarding claim 3, IBM also discloses flagging the packet header wherein the priority of an incoming packet 10B (control header)(p.3, ln. 10, "control headers to designate the packet's priority").

Regarding claims 5,6,8,9 IBM also discloses the step of flagging the packet header wherein the step periodically checking the priority of the data packet being transmitted, and identifying the packet of a low priority and identifying a beginning of the packet of a high priority 52 (flag detector)(p.9, ln. 20, "A flag detector continuously monitors the bit stream received from a communication link for normal, start-preempt and end-preempt flags.").

Regarding claim 10, IBM also discloses a low priority in a storage device comprising transferring the remainder of the packet to a queue 54 (preemptable packet buffer).

12. Claim 11 rejected under 35 U.S.C. 102(b) as being unpatentable over IBM (EP 0 684 719 A1) (provided by the applicant) and in view of Kanakia (U.S. Pat No. 5,309,432).

Regarding claim 11, IBM EP 0 684 719 A1 discloses a network designed to transport (transmission) a plurality of types of packets each having a different priority (real-time and non-real-time), comprising a shared packet pipe (T1 line); a signal transmission means communicatively coupled to the shared packet pipe (sender trunk), a controller connected to the shared packet pipe (LXMTT,LRECV); and a signal receiving means connected to a shared packet pipe (receiver trunk), wherein the packet prioritization and transmission algorithm is stored in the controller and is used by the controller to regulate the transmission of packets through the standard packet pipe (LXMTT,LRECV). Fig. 4. However, IBM fails to disclose an apparatus for appending multiple packet types to effect predictable transmission in a shared packet pipe. In an analogous art, Kanakia discloses wherein packets received in the switch are stored in memory until they are output, and packets are serially received in input shift registers wide enough to store an entire packet. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify method by including a buffer wide enough to append and store packets, as taught by Kanakia, for high speed packet switching. Col. 2, ln. 38-41.

13. Claims 12-19 rejected under 35 U.S.C. 103(a) as being unpatentable over IBM EP 0 684 719 A1 and Kanakia as applied to claim 11 above, and further in view of Ellis et al. (U.S. Pat No. 5,497,371).

Regarding claim 12-19, IBM EP 0 684 719 A1 and Kanakia disclose the apparatus of claim 11. However, the combination of IBM EP 0 684 719 A1 and Kanakia did not reveal a programmable controller. In an analogous art, Ellis discloses a programmable controller 24,36 (source card, destination card). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus by having a programmable controller, as taught by Ellis for the purpose of transporting mixed traffic of different classes from one node to another over a single [shared] link. Col. 3, ln. 16-30.

Regarding claim 12, Ellis also discloses a controller 24,36 (source card, destination card) and it is programmed to insert a packet flag 32 (header generator; col. 4, ln. 47-50) at a place in which the packet is to be divided after prematurely ending the transmission of a packet having a low priority. Fig. 2; See also Fig. 5 for more details such as 60 protocol sequence block.

Regarding claim 13, Ellis also discloses a controller 24,36 (source card, destination card) and it is programmed to periodically check 40 (protocol checker) the priority of the data packet being transmitted after flagging (flag in Fig. 4) the packet header. Fig. 2; See also Fig. 5 for more details such as 74 protocol sequence checking block.

Regarding claim 14, Ellis also discloses a controller 24,36 (source card, destination card) and it is programmed to identify 38 (header reader) the packet of a low priority 42 (buffer) and to identify 38 (header reader) a beginning of the packet of a high priority 44 (buffer) after flagging (flag,P in Fig. 4) the packet header. Fig. 2.

Regarding claim 15, Ellis also discloses a controller 24,36 (source card, destination card) and it is programmed to determine 38 (header reader) the priority of a high *priority* packet based on the results of the CRC (Fig. 3) check 40 (protocol checker) on the packet having the low priority.

Regarding claim 16, Ellis also discloses a controller 24,36 (source card, destination card) and it is programmed to identify 38 (header reader) an interrupting of the packet of the low priority after flagging (SEQ No. in Fig. 4) a packet header.

Regarding claim 17, Ellis also discloses a controller 24,36 (source card, destination card) and it is programmed to identify 38 (header reader) the priority (P in Fig. 4) of an interrupted (SEQ No. in Fig. 4) packet after flagging a packet header.

Regarding claim 18, Ellis also discloses a controller 24,36 (source card, destination card) and it is programmed to check the CRC on the packet having a low priority after determining the priority of an incoming packet. Col. 7, ln. 28-36.

Regarding claim 19, Ellis also discloses a controller 24,36 (source card, destination card) and it is programmed to transfer the remainder of the packet having a low priority to storage device. Col. 4, ln. 56-Col. 5, ln. 7.

Allowable Subject Matter

14. Claims 4,7 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Calvignac et al. (U.S. Pat No. 5,557,608) discloses a method and apparatus for transmission of high priority traffic on low speed communication links. It is noted that this is the same patent as IBM EP 0 684 719 A1, as provided by applicant.

Fontenot (U.S. Pat No. 4,616,359) discloses an adaptive preferential flow control for data packets to reduce congestion. There is a permit packet indication and a queuing buffer.

Kappler et al. (incl. Rogers as one of the inventors)(U.S. Pat No. 6,064,650) and Rogers et al. (incl. Kappler as one of the inventors)(U.S. Pat No. 6,064,651) disclose a rate shaping in per-flow output queued routing mechanisms, the former having output links servicing multiple physical layers and the latter for statistical bit rate service. Both make use of a CRC in the transmission.

Ulug (U.S. Pat No. 4,510,599) discloses a prioritized unidirectional distributed bus accessing system, where the control circuit aborts transmission whenever a higher or equal priority packet is received at the BIU (Bus Interface Unit) and lower priority packets are stored in memory for later transmission.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blanche Wong whose telephone number is 703-305-

8963. The examiner can normally be reached on Monday through Friday, 830am to 530pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H Pham can be reached on 703-305-4378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9600.

BW
February 6, 2004

CHAU NGUYEN
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